United States Patent [19]

Skattman et al.

[11] **3,784,159**

[45] **Jan. 8, 1974**

[54] **MOBILE, ROCK DRILL SUPPORTING RIG**

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[21] Appl. No.: **125,957**

[30] **Foreign Application Priority Data**

Mar. 19, 1970 Sweden 3611

[52] **U.S. Cl.** **254/45,** 173/23, 173/28, 175/219, 280/6.11

[51] **Int. Cl.** **B66f 7/26,** E21c 11/02

[58] **Field of Search** 254/45, 86, 88, 89, 254/93, 49, 50; 173/28, 23, 171; 175/219, 85; 180/89; 280/6.11, 32.5, 150.5; 248/15, 13; 212/145

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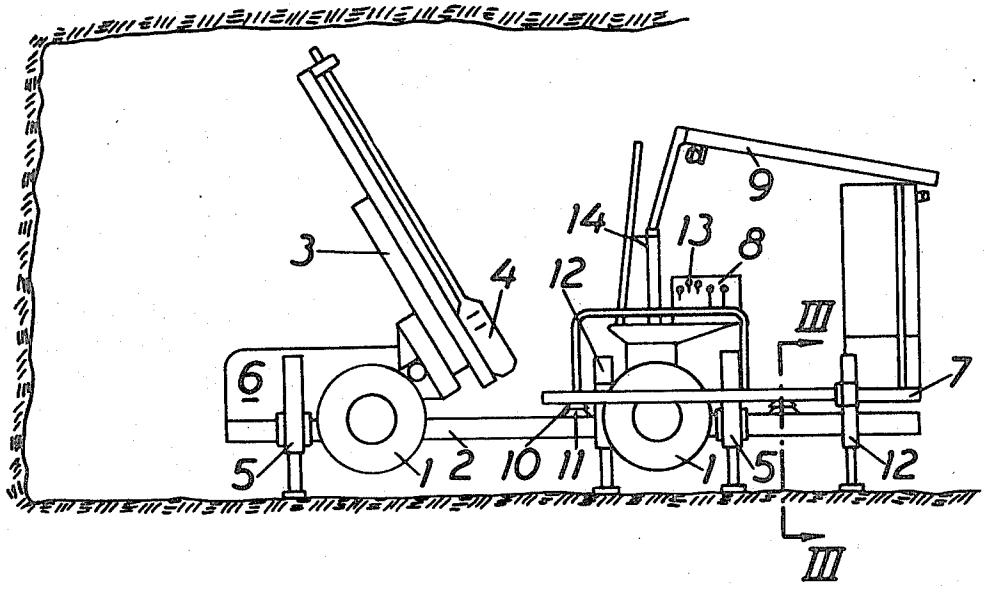
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Primary Examiner—Othell M. Simpson
Assistant Examiner—Robert C. Watson
Attorney—Munson & Fiddler

[57] **ABSTRACT**

The drill rig comprises a mobile chassis, rock drill supporting means mounted on the chassis, hydraulic jacks attached to the chassis for setting up the rig in a work position, an operator's platform resting upon the chassis in a transport position by means of cooperating support means and lift and support means attached to the platform for separating the platform from the chassis into a work position in which the vibrations in the chassis, caused by the rock drill or drills, are not transferred to the platform.

11 Claims, 5 Drawing Figures



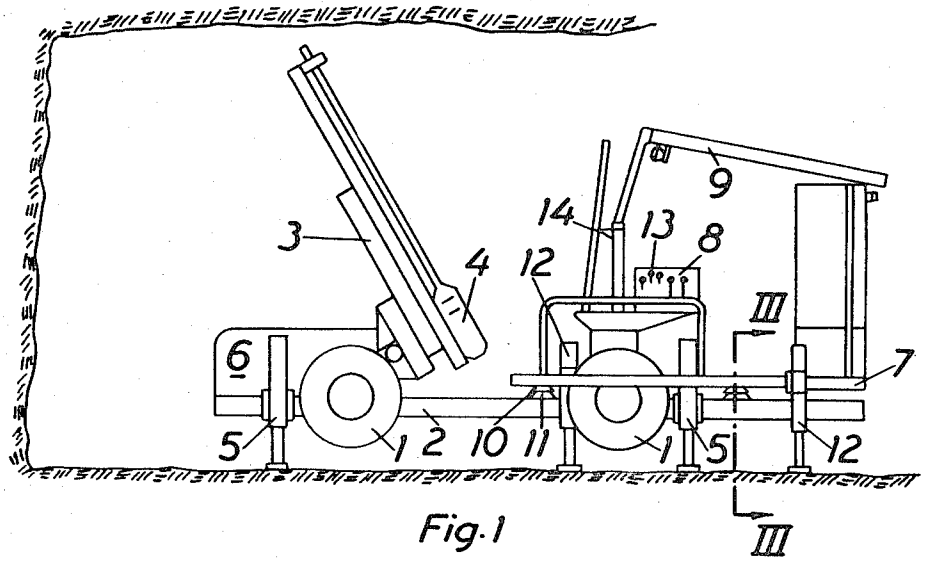


Fig. 1

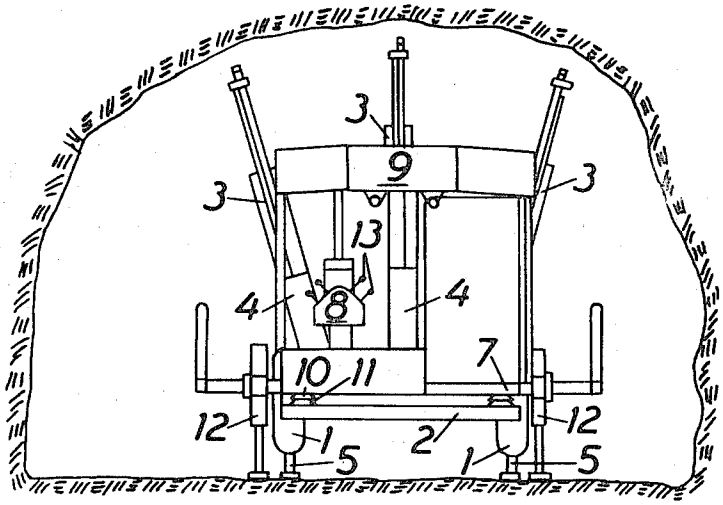


Fig. 2

RUNE CARL VALFRID SKATTMAN
and OLOV RICHARD BJORK

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BY MUNSON & FIDDLER

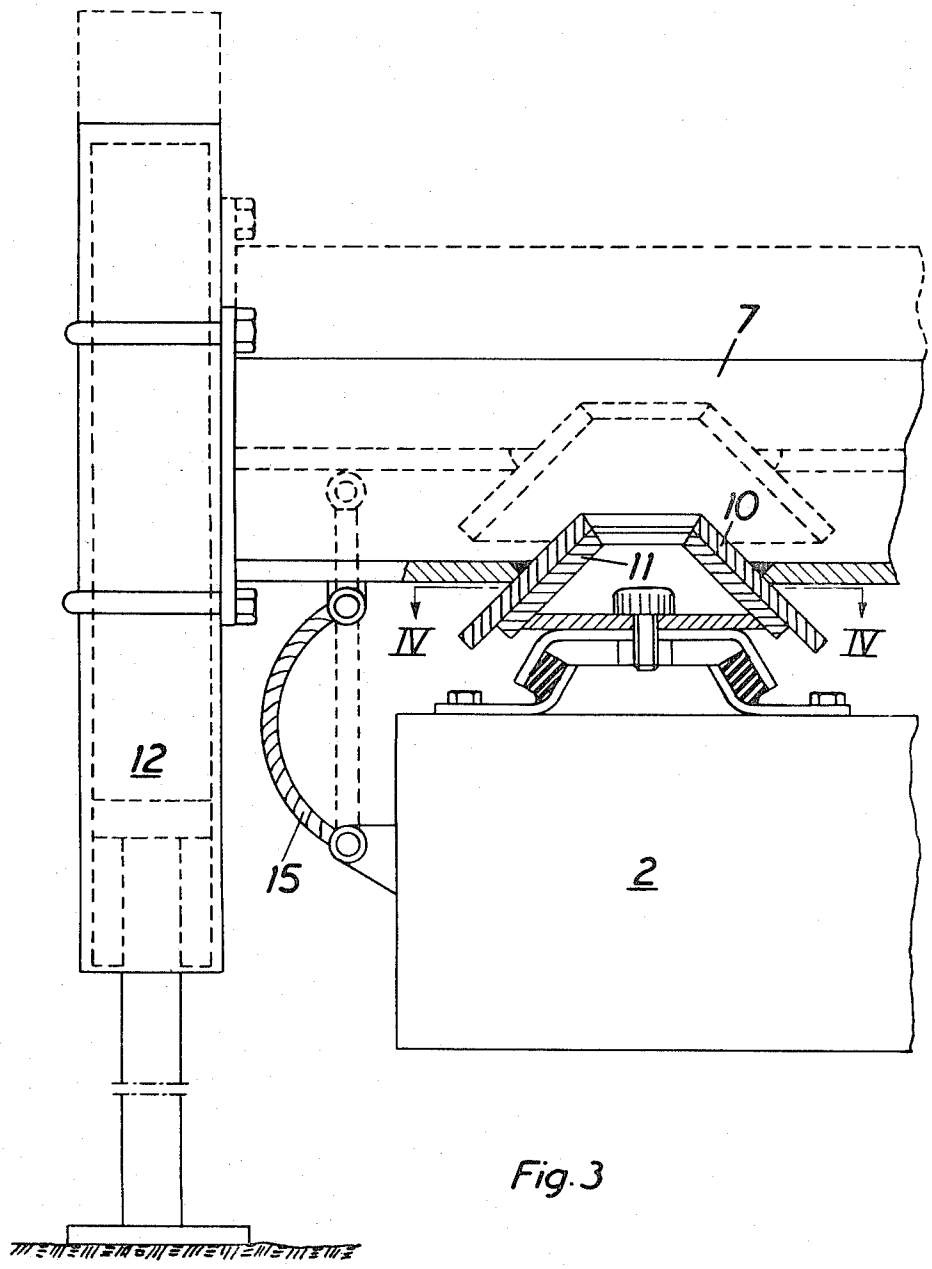


Fig. 3

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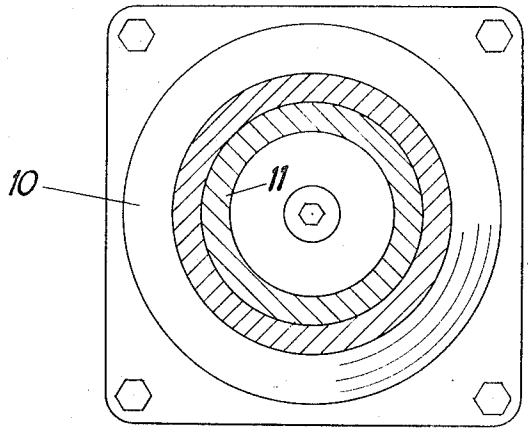


Fig. 4

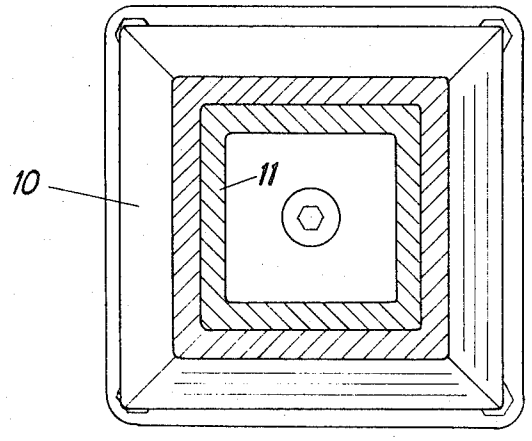


Fig. 5

MOBILE, ROCK DRILL SUPPORTING RIG

This invention relates to a mobile, rock drill supporting rig which comprises an operator's platform.

Previous drill rigs of this type are disadvantageous in that the vibrations, caused by the rock drill or drills during drilling, are transferred to the platform and further to the operator being on the platform. Those vibrations cause considerable physical strain on the operator and are particular serious in the case the rig is provided with two or more rock drills.

The main object of the invention is to solve this problem by arranging the platform separable from the rig chassis, so that the platform can be isolated from the chassis during drilling.

An embodiment of the invention will hereinafter be described in detail with references made to the accompanying drawings, wherein FIG. 1 is a side elevational view of a drill rig according to the invention set up in work position. FIG. 2 is an end elevational view of the rig in FIG. 1. FIG. 3 is a large scale cross section along line III—III in FIG. 1, wherein the platform is resting upon the rig chassis and the lifted up work position of the platform is marked out with dotted lines. FIG. 4 is a cross section through the conical support means taken along the line IV—IV of FIG. 3. FIG. 5 is a cross section similar to FIG. 4 showing a prismatic support means.

The mobile rig shown in FIG. 1 and 2 consists of a rig chassis 2 provided with wheels 1. On the chassis 2 there are mounted three rock drill supporting feed bars 3, each provided with a rock drill 4. To establish a rigid set up of the drill rig in its working position, it is provided with a number of downwardly extendible support legs 5 preferably consisting of hydraulic jacks. On the rig chassis 2 there is provided a box 6 within which all the main valves for the rock drill functions are arranged. According to the invention the drill rig comprises an operator's platform 7. On the platform there is mounted a control panel 8 which supports a number of control valves. These valves are operable by means of levers 13 for manoeuvering of the rig and the rock drills. On the platform there is also arranged a drill rod rack 14 and a protective roof 9.

The rig chassis and the operator's platform 7 are provided with cooperating support means 10 and 11 by means of which the platform is arranged to rest upon the rig chassis in a transporting position.

To isolate the operator's platform 7 from the rig chassis, which is subjected to considerable vibrations during drilling, the platform is provided with downwardly extendible support legs 12 preferably consisting of hydraulic jacks. By means of these jacks the, platform can be lifted up so that the support means 10 and 11 are separated and the platform forms a free standing unit to which vibrations of the rig chassis will not be transmitted. In the described embodiment of the invention the support legs consist of hydraulic piston-cylinder units. However, the invention is not limited thereto. Of course, the support legs may consist of other equivalent devices; for example mechanical screw operated jacks. In the described embodiment of the invention, the support legs of the rig chassis as well as the support legs of the platform consist of hydraulic piston-cylinder devices which are all operated from the control panel 8. In order not to make the figures obscure, supply conduits to these hydraulic support legs are not shown.

As being apparent from FIG. 3 the support means 10 and 11 are provided with slanted prismatic contact surfaces (see FIG. 5) which will centralize the platform relative to the rig chassis as the former is lowered. The contact surfaces may also be conical as shown in FIG. 4. Moreover, between the rig chassis and the platform there are provided wire straps 15 for limiting the lift movement of the platform above the rig chassis. The height to which the platform is raised above the rig chassis should not exceed the ability of the support means 10 and 11 to restrict sidewise movement of the platform relative to the rig chassis. Should the platform be lifted up too high the bottom edge of the upper support means 10 may pass sidewise past the top edge of the lower support means 11 and bring them out of alignment. Thus, the support means 10 and 11 may not be able to cooperate as the platform is lowered.

The invention is not limited to the described and shown embodiment but can freely be varied within the scope of the claims.

What we claim is:

1. A supporting rig for a rock drill of the character described comprising:
   - a a chassis for supporting the rig in a working position;
   - b a platform for supporting the drill operator;
   - c means for supporting said chassis on the ground;
   - d separate means adapted for individually supporting said platform on the ground; and being operable to raise the platform into an elevated free standing position.
   - e means for supporting said platform on said chassis in its lowered position being effective to maintain the platform aligned with the chassis when the platform is raised to an elevated free standing position;

2. A drill rig according to claim 1, characterized in that the supporting means are provided with mating tapered contact surfaces.

3. A drill rig according to claim 1, characterized in that the separate supporting means on the platform comprise pressure fluid actuated piston-cylinder devices.

4. A mobile rock drill supporting rig comprising a chassis supporting the drill and an operator's platform adapted to rest on said chassis said operator's platform comprising means for raising the same above the chassis and to support it on the ground independently of the chassis when drilling.

5. Device according to claim 4 in which the means for raising the operator's platform comprise support legs adapted to be extended from the operator's platform into contact with the ground.

6. Device according to claim 5 in which said support legs comprise hydraulic power means.

7. Device according to claim 5 in which the operator's platform is provided with additional support means having a contact surface slidably engaging a seat member carried by said chassis.

8. Device according to claim 7 in which the support means of the platform and the seat member of the chassis have mating tapered contact surfaces and means being provided for restricting the distance between the chassis and the operator's platform in the raised position of the latter so that transverse movement between said support means and said seat member is limited by said contact surfaces.

9. Device according to claim 1 in which the means for supporting the platform on the chassis comprise tapered nested members.

10. Device according to claim 1, in which the means for individually supporting the platform on the ground comprise hydraulic jack means.

11. Device according to claim 1, in which means are provided for limiting the distance of the elevated free standing position of the platform.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,784,159 Dated January 8, 1974

Inventor(s) RUNE CARL VALFRID SKATTMAN ET AL

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

[30] Foreign Application Priority Data

March 19, 1970 SWEDEN.....3711/70

Signed and sealed this 9th day of July 1974.

(SEAL)
Attest:

McCOY M. GIBSON, JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents

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